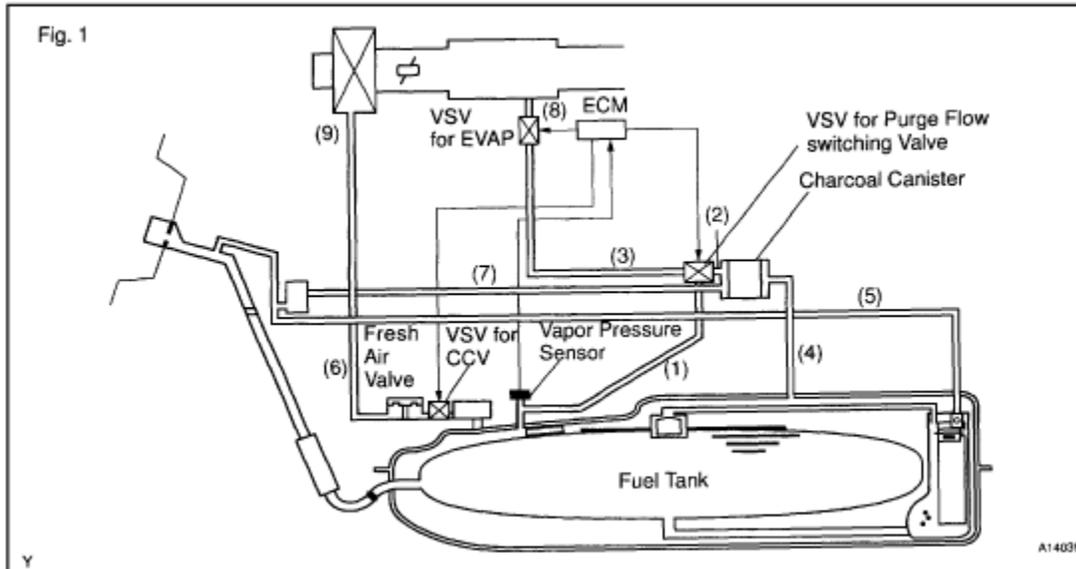


DTC P0440 EVAPORATIVE EMISSION CONTROL SYSTEM MALFUNCTION

CIRCUIT DESCRIPTION

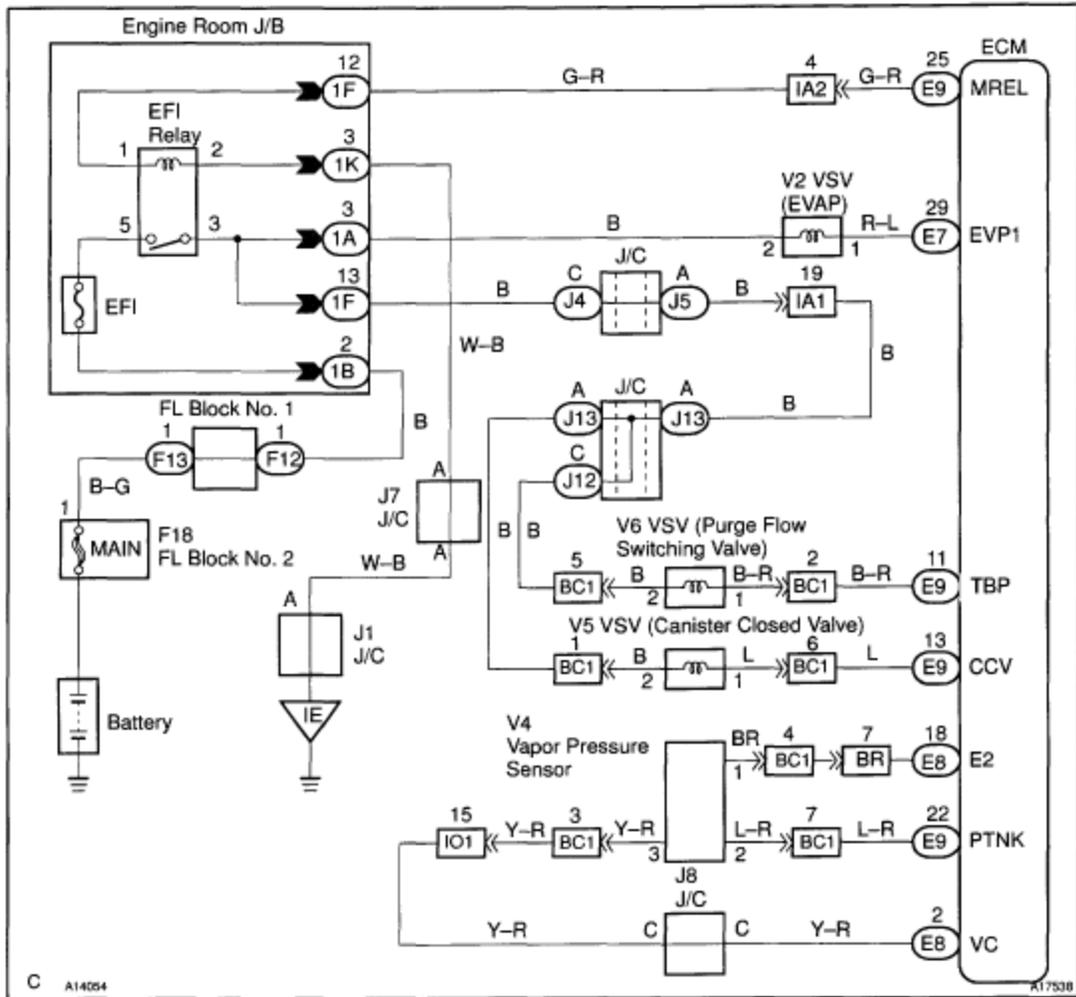


DTC No.	DTC Detecting Condition	Trouble Area
P0440	When the vacuum applied to the sealed tank cannot be kept for a fixed time.	<ul style="list-style-type: none"> • Hose or tube cracked, hole, damaged or loose seal ((3) and (4) in Fig. 1) • Fuel tank cap incorrectly installed • Fuel tank cap cracked or damaged • Vacuum hose cracked, holed, blocked, damaged or disconnected ((1) (2) and (3) in Fig. 1) • Fuel tank cracked, holed or damaged • Charcoal canister cracked, holed or damaged • Open or short in vapor pressure sensor circuit • Vapor pressure sensor • ECM

The vapor pressure sensor, VSV for canister closed valve (CCV) and VSV for purge flow switching valve are used to detect abnormalities in the evaporative emission control system.

The **ECM** decides whether there is an abnormality in the evaporative emission control system based on the vapor pressure sensor signal.

DTC P0440 is recorded by the **ECM** when evaporative emissions leak from the components or when the vapor pressure sensor malfunctions.



1	Check whether hose close to fuel tank have been modified, and check whether there are signs of any accident near fuel tank or charcoal canister.
----------	---

CHECK:

Check for cracks, deformation and loose connection of the following parts:

- Fuel tank
- Charcoal canister
- Fuel tank filler pipe
- Hoses and tubes around fuel tank and charcoal canister

NG	Repair or replace.
-----------	---------------------------

OK

2	Check that fuel tank cap is TOYOTA genuine parts.
----------	--

NG	Replace to TOYOTA genuine parts.
-----------	---

OK

3	Check that fuel tank cap is correctly installed.
----------	---

NG	Correctly install fuel tank cap.
-----------	---

OK

4	Check fuel tank cap.
----------	-----------------------------

NG	Replace fuel tank cap.
-----------	-------------------------------

OK

5 Check filler neck for damage.

PREPARATION:

Remove the fuel tank cap.

CHECK:

Visually inspect the filler neck for damage.

NG Replace filler pipe.

OK

6 Check vacuum hoses ((1), (2) and (3) in Fig. 1 in circuit description).

CHECK:

- (a) Check that the vacuum hose is connected correctly.
- (b) Check the vacuum hose for looseness and disconnection.
- (c) Check the vacuum hose for cracks, hole and damage.

NG Repair or replace.

OK

7 Check hose and tube around fuel tank and charcoal canister.

CHECK:

- (a) Check for proper connection ((4), (5), (6) and (7) in Fig. 1 in circuit description).
- (b) Check the hose and tube for cracks, hole and damage.

NG Repair or replace.

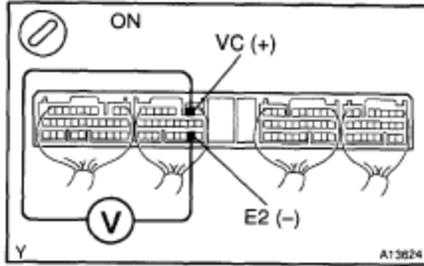
OK

8 Check charcoal canister for cracks, hole and damage.

NG Replace charcoal canister.

OK

9 Check voltage between terminals VC and E2 of ECM connector.



CHECK:

- (a) Remove the ECM with connector still connected.
- (b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals VC and E2 of the ECM connector.

OK:

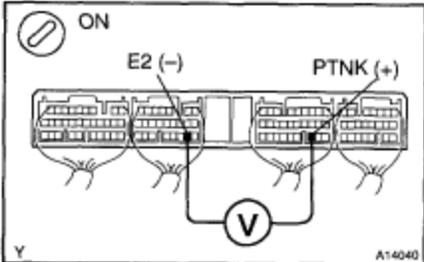
Voltage: 4.5 – 5.5 V

NG

Check and replace ECM .

OK

10 Check voltage between terminals PTNK and E2 of ECM connectors.



PREPARATION:

- (a) Remove the ECM with connector still connected.
- (b) Remove the fuel tank cap.
- (c) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals PTNK and E2 of the ECM connectors.

OK:

Voltage: 3.0 – 3.6 V

OK

Go to step 12.

NG

11 Check for open and short in harness and connector between vapor pressure sensor and ECM .

NG

Repair or replace harness or connector.

OK

Replace vapor pressure sensor.

12 Check fuel tank and fuel tank over fill check valve for cracks and damage.

NG

Replace fuel tank or fuel tank over fill check valve.

OK

It is likely that vehicle user did not properly close fuel tank cap. Please explain to customer how to properly install fuel tank cap.

-
- If DTC P0441, P0446, P0450 or P0451 is output after DTC P0440, first troubleshoot DTC P0441, P0446, P0450 or P0451. If no malfunction is detected, troubleshoot DTC P0440 next.
 - Ask the customer whether, after the MIL came on, the customer found the fuel tank cap loose and tightened it. Also ask the customer whether the fuel tank cap was loose when refuelling. If the fuel tank cap was loose, it was the cause of the DTC. If the fuel tank cap was not loose or if the customer was not sure if it was loose, troubleshoot according to the following procedure.
 - Read freeze frame data using TOYOTA hand-held tester or OBD II scan tool. Because freeze frame records the engine conditions when the malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.
 - When the ENGINE RUN TIME in the freeze frame data is less than **200 seconds** , carefully check the VSV for EVAP, charcoal canister and vapor pressure sensor.